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FILE 'CA' ENTERED AT 10:41:48 ON 28 APR 2006
L1 106924 S TEMPERATURE(2A) (CONCENTRAT? OR COMPOSITION)
L2 3452 S L1 (6A) (CURVE OR PLOT? OR DIAGRAM? OR DISPLAY? OR GRAPH? OR
CONTOUR?)
L3 397724 S TEMPERATURE(4A) (FUNCTION OR BASED OR DEPEND?)
L4 336125 S (CONCENTRAT? OR COMPOSITION) (4A) (FUNCTION OR BASED OR DEPEND?)
L5 32557 S L3 AND L4
L6 14370 S L3-4 (6A) (CURVE OR PLOT? OR DIAGRAM? OR DISPLAY? OR GRAPH? OR
CONTOUR?)
L7 998 S L5 AND L6
L8 48 S L7 AND (EMULS? OR MICROEMULS? OR SUSPENS? OR MICELL?)
L9 93061 S (VARIABLE OR PARAMETER OR PROPERTY OR CHARACTERISTIC) (6A) (CURVE
OR PLOT? OR DIAGRAM? OR DISPLAY? OR GRAPH? OR CONTOUR?)
L10 417 S L5 AND L9
L11 214 S L10 AND (EMULS? OR MICROEMULS? OR SUSPENS? OR MICELL? OR LIQUID OR
SOLVENT OR SOLUTION OR FLUID)
L12 1757 S L2 AND (EMULS? OR MICROEMULS? OR SUSPENS? OR MICELL? OR LIQUID OR
SOLVENT OR SOLUTION OR FLUID)
L13 36 S (AUTOMAT? OR COMPUTER OR PROCESSOR OR MICROPROCESS? OR
MICROCOMPUTER) AND L12
L14 43 S L12 AND (3D OR (3 OR THREE OR MULTI OR MULTIPLE) (2W) (D OR
DIMENSION?))
L15 612 S L5-6 AND (3D OR (3 OR THREE OR MULTI OR MULTIPLE) (2W) (D OR
DIMENSION?))
L16 11 S (AUTOMAT? OR COMPUTER OR PROCESSOR OR MICROPROCESS? OR
MICROCOMPUTER) AND L15
L17 18 S (AUTOMAT? OR COMPUTER OR PROCESSOR OR MICROPROCESS? OR
MICROCOMPUTER) AND L10
L18 9 S (AUTOMAT? OR COMPUTER OR PROCESSOR OR MICROPROCESS? OR
MICROCOMPUTER) AND L7
L19 51 S L11 AND (LIGHT(1A) SCATTER? OR TURBID? OR NEPHALOM? OR NEPHELEM? OR
NEPHELO? OR NEPHLOM? OR NEPHOL? OR PH OR VISCOS? OR CONDUCTIV?)
L20 201 S L8, L13-14, L16-19
L21 147 S L20 NOT PY>1997
L22 126 S L21 NOT (SOLID SOLUTION OR DUST)
L23 114 S L22 NOT ALLOY
L24 103 S L23 NOT (SWELLING OR NMR OR MELT)
L25 3 S L23 NOT L24 AND (TURBIDITY OR LIGHT SCATTER?)
L26 101 S L24 NOT NUCLEAR
L27 100 S L26 NOT FLUE
L28 103 S L25, L27

=> d bib, ab l28 1-103

L28 ANSWER 4 OF 103 CA COPYRIGHT 2006 ACS on STN
AN 126:347897 CA
TI Critical properties and activation energy of nitrobenzene in n-alkanes
solutions
AU Dega-Dalkowska, A.
CS Institute Physics, A. Mickiewicz University, Poznan, 60780, Pol.
SO Phase Transitions (1997), 60(3), 143-153

AB The **viscosity** coeff. η of nitrobenzene in n-octane and n-nonane **solns.** was measured as a **function** of **concn.** and **temp.** The coexistence **curve**, crit. exponent β , and crit. **parameters** of these **solns.** were detd. From exptl. η vs. $T-1$ curves, and by applying the method of tangents, the activation energy of **viscosity** E is calcd. as a **function** of **concn.** and **temp.** The obsd. max. in the curves of E vs. the solute concn. (decreasing with increasing distance from the phase sepn. temp.) and particularly well marked in the crit. region, is related to changes in the microstructure of the **liq.** appearing because of fluctuations in the crit. region. The character of the **temp.** and **concn. dependence** of E was studied for nitrobenzene **solns.** in a few n-alkanes.

L28 ANSWER 7 OF 103 CA COPYRIGHT 2006 ACS on STN

AN 126:104692 CA

TI Shear Effects on the Phase Diagrams of **Solutions** of Highly Incompatible Polymers in a Common **Solvent**. 1. Equilibrium Behavior and Rheological Properties

AU Krause, Cora; Wolf, B. A.

CS Institut fuer Physikalische Chemie, Johannes Gutenberg-Universitaet, Mainz, D-55099, Germany

SO Macromolecules (1997), 30(4), 885-889

AB Phase diagrams (cloud points, tie lines, crit. compns.) and **viscosities** of homogeneous **solns.** were detd. at 20-100° for the ternary system cyclohexanone /polystyrene/ poly(Bu methacrylate) [CHO/PS/PBMA] to study shear influences. An only moderate increase of the two-phase region obsd. upon heating (LCST [lower crit. **soln.** temp.] behavior) indicate a small effect of heat upon mixing. Tie lines which are nearly parallel to the PS/PBMA edge of the Gibbs phase triangle indicate comparable **solvent** quality of CHO for both polymers. The quant. math. description of the equil. behavior-required for a theor. treatment of shear influences-was performed on the basis of the Flory-Huggins equation by **compn.** and **temp. dependent** binary (integral) interaction parameters g_{ij} . The present approach avoids the use of chem. potentials and minimizes the Gibbs energy of mixing directly. Literature data for gCHO/PS and gCHO/PBMA were used; gPS/PBMA was adjusted to reproduce the measured phase diagram of the ternary system. Calcd. and measured phase diagrams match well. The rheol. results were used to establish a math. expression describing the **compn.** and **temp. dependence** of the **soln. viscosities**; such an equation is required for the theor. treatment of shear influences on the phase diagram.

L28 ANSWER 10 OF 103 CA COPYRIGHT 2006 ACS on STN

AN 124:127612 CA

TI Linear and non-linear rheological behavior of salt-free aqueous CTAB solutions

AU Cappelaere, E.; Cressely, R.; Decruppe, J. P.

CS Metz, 57070, Fr.

SO Colloids and Surfaces, A: Physicochemical and Engineering Aspects (1995), 104(2/3), 353-74

AB We report here exptl. results of the linear and nonlinear rheol. properties of concd. aq. solns. of cetyltrimethylammonium bromide (CTAB) without addn. of salt. The range of concn. studied in this work is just

before a static liq. cryst. phase is obtained. The flow curves show three different and well characterized domains of evolution. In the first part of the curve, the Newtonian part, we obtain as a **function of concn.** a very unusual power law exponent of nearly 12 for the zero shear viscosity η_0 and 62 for a terminal relaxation time. The second region is characterized by a plateau value σ_c of the shear stress ranging from $\dot{\gamma}_1$ to $\dot{\gamma}_2$. This domain corresponds to the transition from an isotropic to a nematic state with an intermediate biphasic system. The evolution of σ_c , $\dot{\gamma}_1$ and $\dot{\gamma}_2$, are given as a **function of concn. and temp.** to obtain dynamic phase **diagrams**. The third region shows a new increase of the stress with shear rate. This domain is well defined in our system and is practically independent of temp. and concn., contrary to the situation in the first and second domains which show a great dependence on these parameters. Measurements of flow birefringence confirm the nature of the phase transition occurring in the second domain and shows the existence of a shear-banding structure for $\dot{\gamma}_1 < \dot{\gamma} < \dot{\gamma}_2$. At present, theory cannot explain all the results obtained in this work.

L28 ANSWER 12 OF 103 CA COPYRIGHT 2006 ACS on STN

AN 123:326307 CA

TI Reentrant uniaxial-biaxial transition in polyethylene glycol doped lyotropic liquid crystals

AU Shibli, Suhaila Maluf; Figueiredo Neto, Antonio Martins

CS Instituto de Fisica, Universidade de Sao Paulo, Sao Paulo, 01452-990, Brazil

SO Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals and Liquid Crystals (1995), 260, 623-9

AB Interferometric measurements of the effect of a polymer gradationally added to a lyotropic liq. crystal are reported. Studies of the phase **diagram**, birefringence and crit. exponents as a **function** of the polymer **concn.** are presented. Measurements of the optical birefringence as a **function** of **temp.** were performed with the **micellar** system K laurate, 1-decanol, and H₂O doped with variable quantities of the polymer polyethylene glycol (PEG). The transitions from the calamitic nematic phase to a reentrant discotic-biaxial-discotic phase were obsd. when increasing the PEG molar concn. The results confirm the crit. properties of the uniaxial-to-biaxial nematic transition. The crit. exponent for the order parameter ($\beta = 0.38$) obtained for the sample without PEG is in good agreement with the value calcd. for the XY model. Some results with higher PEG doping concn. indicate that β is >0.38 leading to the mean-field value.

L28 ANSWER 14 OF 103 CA COPYRIGHT 2006 ACS on STN

AN 122:322361 CA

TI Effect of pressure on the colloidal solution behavior of aqueous local anesthetic tetracaine solutions

AU Matsuki, Hitoshi; Maruyama, Shoji; Kaneshina, Shoji

CS Faculty of Engineering, University of Tokushima, Tokushima, 770, Japan

SO Colloids and Surfaces, A: Physicochemical and Engineering Aspects (1995), 97(1), 21-6

AB The soln. behavior of two local anesthetics, tetracaine-HCl (TC•HCl) and tetracaine-HBr (TC•HBr), in water was studied. The temp.-pressure diagrams of aq. TC•HCl and TC•HBr solns. of different concns. were detd. by observing the sudden change in transmittance accompanying the phase transition from the coagel phase to the **micellar** soln. under high pressure up to 170 MPa. The transition temp. was linearly elevated by applying pressure. It was seen that the temp.-pressure slopes of both anesthetics increase with increasing concn. and become const. above 0.3 mol kg⁻¹. We obtained the concn.-temp. phase diagram of TC•HCl soln. from the soly. vs. temp. curves at different pressures, which were detd. from the **concn. dependence** of the **temp.-pressure diagrams**, and the crit. **micelle** concn. (CMC) vs. temp. curves. The soly. curve intersects the CMC curve at a certain temp. under atm. pressure, which is regarded as the Krafft temp. of TC•HCl. The vol. change assocd. with the phase transition from coagel to **micelle** was estd. from the Clapeyron-Clausius equation using the values of the temp.-pressure slope above 0.3 mol kg⁻¹ and the transition enthalpy taken from the DSC study. The values were detd. to be 8.4 cm³ mol⁻¹ for TC•HCl and 9.5 cm³ mol⁻¹ for TC•HBr, resp. Further, by considering the vol. change of transition for TC•HCl among three states of anesthetic assembly, it was concluded that the soln. behavior of these anesthetics in water bears a striking resemblance, with respect to vol., to that of typical cationic surfactants such as alkyltrimethylammonium salts.

L28 ANSWER 15 OF 103 CA COPYRIGHT 2006 ACS on STN

AN 121:264876 CA

TI High-pressure phase equilibria study of the hydrogen-water **fluid** mixture

AU Scalise, O. H.; Rodriguez, A. E.

CS Instituto de Fisica de Liquidos y Sistemas Biologicos, IFLYSIB, UNLP-CONICET-CICPBA, CC 565 (1900), La Plata, Argent.

SO Fluid Phase Equilibria (1994), 99(1-2), 49-62

AB The phase behavior of aq. **fluid** binary mixts. is investigated by the application of thermodyn. perturbation theory to the polarizable hard-sphere dipole model. Isotherms and isobars of the **three-dimensional** pressure-**temp.-conpn.** phase **diagram** are calcd. for the H₂-H₂O **fluid** mixt. The isotherms and isobars investigated in this work are compared with the exptl. data.

L28 ANSWER 16 OF 103 CA COPYRIGHT 2006 ACS on STN

AN 120:271761 CA

TI **Computer** simulation of phase diagrams of binary and quasi-binary polymer solutions and blends

AU Mumby, S. J.; Sher, P. B.; Case, F. H.; Eichinger, B. E.

CS BIOSYM Technol., Inc., San Diego, CA, 92121, USA

SO Annual Technical Conference - Society of Plastics Engineers (1992), 50th (Vol. 1), 1598-601

AB A theor. approach was described which uses a **temp.** and **concn. dependent** interaction **parameter** to model liq.-liq. phase **diagrams** of quasi-binary polymer solns. and blends in which on component may have mol. wt. distribution. The temp. and concn. coeffs. of the interaction parameter were derived by fitting to limited exptl. data. Two specific systems were used to illustrate the application of this method: polystyrene/acetone and PMMA/polycarbonate.

L28 ANSWER 17 OF 103 CA COPYRIGHT 2006 ACS on STN
AN 119:56809 CA
TI Generic patterns in the microstructure of midrange **microemulsions**
AU Xie, M.; Zhu, X.; Miller, Wilmer G.; Bohlen, David S.; Vinson, Phillip
K.; Davis, H. Ted; Scriven, L. E.
CS Dep. Chem., Univ. Minnesota, Minneapolis, MN, USA
SO Surfactant Science Series (1992), 44(Organized Solutions), 145-58
AB A no. of water/hydrocarbon/surfactant systems have phase behavior similar to that of C12E5/octane/water. The precise shape and position of the one-phase **microemulsion** region in the **temp.**-surfactant **concn.** phase **diagram depends** on both the surfactant and the hydrocarbon. The authors investigate three addnl. water/hydrocarbon/surfactant systems to det. if the patterns of microstructure found for C12E5 with octane are generic. Two of the surfactants are nonionic, C10E4 and C8E3, and one is anionic, sodium bis(2-ethylhexyl)sulfosuccinate or Aerosol OT. Four exptl. techniques were used to det. microstructure. They are pulsed field gradient spin-echo NMR, freeze-fracture transmission electron microscopy, small-angle x-ray scattering, and quasielastic **light scattering**.

L28 ANSWER 20 OF 103 CA COPYRIGHT 2006 ACS on STN
AN 118:75625 CA
TI Viscoelastic behavior of fractionated ovine submaxillary mucins
AU McCullagh, C. M.; Soby, L. M.; Jamieson, A. M.; Blackwell, J.
CS Dep. Macromol. Sci., Case West. Reserve Univ., Cleveland, OH, 44106, USA
SO Biopolymers (1992), 32(12), 1665-74
AB **Soln.** properties of fractionated ovine submaxillary mucin (OSM) and asialo OSM (aOSM) in aq. guanidine hydrochloride have been investigated using **light scattering** and rheol. methods. Viscometric evidence is presented that the mol. structure of OSM is a wormlike chain in both dil. and concd. **soln.** The intrinsic **viscosity** shows mol. wt. dependence consistent with the linear extended chain conformation obsd. by **light scattering** measurements. The viscoelastic behavior of the OSM fractions in aq. guanidine hydrochloride was further examd. above the overlap **concn.** as a **function** of mol. wt. and **temp.** Under these **solvent** conditions in which the role of nonbonding intermol. interactions is minimized, OSM shows predominantly **fluid**-like behavior. However, high-mol.-wt. OSM shows evidence of the existence of an entanglement network at high **concn.** The frequency-dependent shear storage and loss moduli at all **concn.** and mol. wts. can be scaled to yield a master **curve** by incorporating typical viscoelastic shift **parameters**. The entanglement mol. wt. and **concn.** are consistent with literature data for extended, semiflexible wormlike chains. The behavior of aOSM is similar to that of intact OSM at comparable degrees of coil overlap, indicating that the terminal sialic acid residue on the carbohydrate side chain has no effect on the rheol. of concd. OSM **solns.** beyond that due to an increase in the hydrodynamic vol.

L28 ANSWER 21 OF 103 CA COPYRIGHT 2006 ACS on STN
AN 118:12044 CA
TI **Temperature dependence** of the non-Newtonian **viscosity** of elongated micellar solutions

AU Makhloufi, R.; Cressely, R.
CS Lab. Phys. Liq. Interfaces, Univ. Metz, Fr.
SO Colloid and Polymer Science (1992), 270(10), 1035-41
AB New results are reported on the non-Newtonian **viscosity** of aq. **micellar solns.** CTAB in the presence of KBr, in the concn. range where the elongated **micelles** overlap. The expts. were performed as a **function** of the surfactant **concn.**, **temp.**, and shear rate by using a Couette-viscometer. In the non-Newtonian range at relatively low surfactant concn. (~ 0.25 M/L), the results show that the flow curves obtained at different temps. converge to a single linear **curve** with a **characteristic** slope varying with the surfactant concn. These same data can be superposed on a master **curve** when appropriate reduced **variables** are used. The shape of the flow curves obtained at different temps. for a sufficiently high surfactant concn. is similar to that obtained for monodisperse polymer **solns.** at different mol. wts. The slope obtained (~ -1) is also predicted by the W. Graessley (1967) model in the theory of microviscoelasticity based on the entanglement concept for polymer **solns.** However, at surfactant concns. >0.25 M/L, the results show an unusual behavior. Above some crit. shear rate, it is possible to obtain an increase of the apparent **viscosity** with temp. One possible explanation of this effect can be found in the increase of the entanglement with concn. coupled with the temp. and direct flow effects on the scission and recombination rates of the **micelles**.

L28 ANSWER 25 OF 103 CA COPYRIGHT 2006 ACS on STN
AN 116:46763 CA
TI Theoretical and experimental determinations of the crossover from dilute to semidilute regimes of **micellar** solutions
AU Carale, Teresa R.; Blankschtein, Daniel
CS Cent. Mater. Sci. Eng., Massachusetts Inst. Technol., Cambridge, MA, 02139, USA
SO Journal of Physical Chemistry (1992), 96(1), 459-67
AB A theor. framework for predicting the crossover surfactant concn. (X^*) marking the transition from dil. to semidilute to soln. regimes of **micellar** solns. is presented. In the dil. regime, the **micellar** soln. consists of identifiable, rodlike **micelles** which are singly dispersed in the solvent, whereas in the semidilute regime it consists of a transient network of entangled rodlike **micelles**. The theor. formulation incorporates the unique salient features of the **micellar** system, including the self-assembling nature, polydispersity, and flexibility of the rodlike **micelles** present in soln. This general theor. description is then used to examine the possible occurrence of a crossover from dil. to semidilute regimes in aq. solns. of the nonionic surfactant n-dodecyl hexaethylene oxide (C12E6). In the C12E6-H₂O system, the X^* vs. temp. crossover concn. curve intersects the coexistence curve, delineating the boundary between the 1- and 2-phase regions of the phase diagram, in the vicinity of the lower consolute (crit.) point, thus bisecting the phase diagram into dil. and semidilute regimes. It is noteworthy that the X^* values predicted by using the full **micellar** size distribution agree well with those predicted under the assumption of monodisperse **micelles** having an aggregation no. n , corresponding to $\langle n \rangle_w$, the wt.-av. **micelle** aggregation no. An attempt is also made to est. exptl. the C12E6

crossover **concn.** (X^*) **based** on a comparison of the predicted dil.-soln. viscosities, calcd. in the context of a generalized M. Doi-S. Edwards (1978) theory applied to flexible, polydisperse rodlike **micelles**, with measured viscosities as a **function** of C12E6 **concn.** and **temp.** The exptl. deduced X^* values compared favorably with the theor. predicted ones. As in the case of X^* , it is noteworthy that predicted viscosities (using the full **micellar** size distribution) are in close agreement with those predicted under the assumption of monodisperse **micelles** having an aggregation no., $n = \langle n \rangle_w$. There is also an interesting **temp. dependence** of the viscosity vs. C12E6 **concn. curves**. At very low surfactant concns., the viscosity follows the conventional behavior; i.e., it decreases with increasing temp. Beyond a certain surfactant **concn.**, the **temp. dependence** is reversed; i.e., the viscosity increases with increasing temp. An interpretation of this behavior in the context of **micellar** growth is suggested. A discussion of the implications of the new findings for modeling the phase behavior of aq. **micellar** solns. contg. nonionic surfactants of the alkyl polyethylene oxide (CiEj) type is also presented.

L28 ANSWER 27 OF 103 CA COPYRIGHT 2006 ACS on STN

AN 115:84552 CA

TI **Three-dimensional** network plots using colors for a fourth variable for binary mixtures of carbon dioxide or ethane and 1,4-dioxane under sub- and supercritical conditions

AU Kueppers, Stephan; Leyendecker, Dagmar; Schmitz, Franz Peter; Klesper, Ernst

CS RWTH Aachen, Aachen, D-5100, Germany

SO Journal of Supercritical Fluids (1990), 3(3), 121-6

AB The effect of the phys. parameters (compn., pressure, and temp.) on the chromatog. parameters (capacity ratio and resoln.) for mixed mobile phases composed of CO₂ or ethane as the base eluents and 1,4-dioxane as modifier are reported. A dioxane-treated silica stationary phase and a test mixt. of polycyclic arom. hydrocarbons as the analyte have been used. The results are presented by means of **three-dimensional** network plots displaying two variables on the z-axis. These variables are the capacity ratio, k' , of the latest eluting compd. (represented by the shape of the **three-dimensional** surface) and the av. resoln., R_m , of the test mixt. (represented by coloring the surface). The x- and y-axis of **three-dimensional plots** represent the phys. parameters, **compn.**, and **temp.** in isobaric **plots**, or pressure and temp. of the mobile phase in isocratic plots. The simultaneous presentation of the capacity ratio and the resoln. in one plot is useful in showing directly the interrelation between these parameters which is of value for the optimization of sepsns.

L28 ANSWER 28 OF 103 CA COPYRIGHT 2006 ACS on STN

AN 115:9849 CA

TI Viscoelasticity and effects of interphase interaction in blends of normal and **liquid** crystalline thermoplasts

AU Semakov, A. V.; Kantor, G. Ya.; Vasil'eva, O. V.; Dobrosol, I. I.; Khodyrev, B. S.; Kulichikhin, V. G.

CS Inst. Neftekhim. Sint. im. Topchieva, Moscow, USSR

SO Vysokomolekulyarnye Soedineniya, Seriya A (1991), 33(1), 161-9

LA Russian

AB Viscoelastic characteristics (Young's modulus, loss modulus, loss tangent) of blends of bisphenol A-dichlorodiphenyl sulfone copolymer with liq.-cryst. dihydroxyphenyl-isophthalic acid-terephthalic acid copolymer were detd. by the dynamic mech. method in the shear deformation regime in the whole range of the blend compns. at temps. ranging from -150° to +200°. **Computer** processing of the exptl. results permits to present them as **3-dimensional** modulus-temp.-blend **compn. diagrams** or 2-dimensional maps of modulus isolines. This approach led to the detection of small shifts in the positions of the α - and γ -relaxation transitions of one polymer in the presence of the other polymer. Splitting of the glass temp. of the polysulfone was explained by differences in the relaxational mobility of its macromols. near the interphase and further away from the interphase. Anal. of the exptl. data using the Tsao-Halpin model led to the conclusion about enhanced interaction of the components of the blend in the interphase.

L28 ANSWER 29 OF 103 CA COPYRIGHT 2006 ACS on STN

AN 114:214273 CA

TI Thermorheologic properties of aqueous **solutions** and gels of Tetronic 1508

AU Spancake, Christopher W.; Kildsig, Dane O.; Mitra, Ashim K.

CS Sch. Pharm. Pharm. Sci., Purdue Univ., West Lafayette, IN, 47907, USA

SO Pharmaceutical Research (1991), 8(3), 345-9

AB The rheol. properties of aq. **solns.** and gels of Tetronic 1508 were investigated as a **function** of polymer **concn.** and **temp.** utilizing rotational viscometry. Below the sol-gel transition temp. the polymer **solns.** were low in **viscosity** and exhibited Newtonian rheol. behavior even at concns. of 20 and 25% (wt./wt.). Upon sol-gel transition, the more concd. polymer **solns.** underwent a dramatic four- to five-orders of magnitude increase in **viscosity**, resulting in the formation of a rigid gel structure. Above the sol-gel transition temp., the gels **displayed** pseudoplastic and plastic rheol. **properties** and the **viscosity** of the gels remained at a relatively const. value over a wide temp. range. Eventually, the thermal energy of the system exceeded the bonding forces within the gel structure, resulting in a gel-sol transition which was marked by a dramatic decrease in the **viscosity** of the system. Above the gel-sol transition temp., the system reverted to a Newtonian **fluid** with **viscosities** very similar to those found for the Tetronic 1508 **solns.** at temps. below the sol-gel transition temp. The thermodyn. implications of the gel-sol transition are discussed.

L28 ANSWER 30 OF 103 CA COPYRIGHT 2006 ACS on STN

AN 113:238005 CA

TI **Automated** establishment and plotting of multivariate functions

AU Yan, Zequn; Tang, Xiaoheng

CS Dep. Chem. Eng., Beijing Inst. Chem. Technol., Beijing, Peop. Rep. China

SO Analytica Chimica Acta (1990), 234(2), 493-7

AB The earlier package for univariate functions is extended to multivariate functions in the QQN series software, which contains millions of models. The models are characterized by numbered basic and compd. functions which are selected by the user. Plots for a selected model are displayed in rotatable **three-dimensional** coordinates. The package can

be run on an IBM-PC or compatible **computer**. An application to plotting the thermal capacity of alkanes is given.

L28 ANSWER 32 OF 103 CA COPYRIGHT 2006 ACS on STN

AN 112:166184 CA

TI Phase equilibrium calculations and **three-dimensional computer** graphics representation

AU Nitta, Tomoshige; Ikeda, Kazufumi; Katayama, Takashi

CS Fac. Eng. Sci., Osaka Univ., Osaka, 560, Japan

SO Fluid Phase Equilibria (1989), 53, 105-12

AB An important role of global stability anal. is emphasized for phase equil. calcns. to det. the thermodynamically most stable **soln.** An algorithm used in this work is to find first an outside **soln.** in the Gibbs energy surface and then to search any inside **solns.** by means of the bisection search principle. The global stability anal. should also be applied to mixt. crit. points calcd. from the conventional crit. condition. Typical phase diagrams are calcd. for binary mixts. including three phases (gas, **liq.** and solid) by using the Soave-Redlich-Kwong equation of state. **Three-dimensional** pressure-temp.-compn. (pTx) phase **diagrams** were **displayed** on a personal **computer** with functions of rotation, zoom, enlargement and projections on the pT, px and Tx axes.

L28 ANSWER 36 OF 103 CA COPYRIGHT 2006 ACS on STN

AN 111:19736 CA

TI Polymorphic phase behavior of lysopalmitoylphosphatidylcholine in poly (ethylene glycol)-water mixtures

AU King, Martin D.; Marsh, Derek

CS Abt. Spektrosk., Max-Planck-Inst. Biophys. Chem., Goettingen, D-3400, Fed. Rep. Ger.

SO Biochemistry (1989), 28(13), 5643-7

AB The polymorphic phase behavior of 1-palmitoyl-2-lyso-sn-glycero-3-phosphocholine dispersions in excess H₂O was studied as a **function** of **temp.** and PEG **conc.**, using ¹H dipolar-decoupled ³¹P NMR spectroscopy and **turbidity** measurements. The phase behavior **depended** on both lipid **conc.** and PEG concn., and most of the NMR expts. were conducted at a lipid concn. of 15 mg/mL. At low PEG concns. (0-12 wt %), a thermotropic transition occurs at 3-5° with increasing temp., from an interdigitated lamellar gel (L β i) phase to a normal **micellar** phase. At intermediate PEG concns. (12-20 wt %), thermotropic transitions take place with increasing temp., 1st from the lamellar gel phase to a fluid cubic (Q α) phase and then at higher temps. from the cubic phase to the **micellar** phase. At intermediate PEG concns. above the former range (20-30 wt %), thermotropic transitions take place with increasing temp., 1st from the lamellar gel phase to the cubic phase then from the cubic phase to a normal hexagonal (H_I) phase, and finally from the hexagonal phase to the **micellar** phase. At high PEG concns. (>30 wt %), a thermotropic transition takes place with increasing temp. from the lamellar gel phase directly to the fluid hexagonal phase. At these high PEG concns., the **micellar** phase is not attained within the accessible temp. range ($\leq 90^\circ$ C). The kinetics of some of the phase changes are slow, with half-times of the order of 15 min, and considerable hysteresis, with coexisting phases, is obsd. on the downward temp. scans. The **turbidity**

measurements indicate considerable changes in optical d. in single-phase regions, presumably corresponding to changes in aggregate size. Discontinuities in the **temp. dependence** of the optical d. are obsd. corresponding to some of the phase boundaries, and conversion to the **micellar** phase is evidenced by the transition to optical clarity. A pseudo-binary-phase **diagram** has been constructed as a **function** of PEG **concn.**, and comparison with the phase **diagram** of lysopalmitoylphosphatidylcholine as a function of H2O content (Arvidson, G., et al., 1985) indicates that PEG controls the polymorphic phase behavior by reducing H2O activity. These results are discussed within the context of PEG-induced cell fusion.

L28 ANSWER 37 OF 103 CA COPYRIGHT 2006 ACS on STN
 AN 110:180272 CA
 TI Phase behavior in **fluid** and solid mixtures at high pressures
 AU Streett, William B.
 CS Sch. Chem. Eng., Cornell Univ., Ithaca, NY, 14850, USA
 SO Pure and Applied Chemistry (1989), 61(2), 143-52
 AB Following the description of a classification scheme for **fluid** phase diagrams of two-component systems, based on boundary lines in pressure-temp. space, the **three-dimensional** features of several important classes of pressure-**temp.-compn.** phase **diagrams** for two-component mixts. at high pressures (up to 100 kbar) are described. The discussion includes two- and three-phase equil. between gas, **liq.** and solid phases, with emphasis on the qual. effects of pressure on these systems and the picture of continuity between different types of crit. and 3-phase phenomena that has emerged from studies at high pressures.

L28 ANSWER 46 OF 103 CA COPYRIGHT 2006 ACS on STN
 AN 107:98863 CA
 TI Prediction of transport properties of R22-DMF refrigerant-absorbent combinations
 AU Dorairaj, S.; Agarwal, R. S.
 CS Mech. Eng. Dep., Indian Inst. Technol., Delhi, 110016, India
 SO International Journal of Refrigeration (1987), 10(4), 224-8
 AB The transport properties are evaluated of R22-DMF **solns.** A no. of methods were used to est. the thermal **cond.**, **viscosity**, and surface tension. The selection of suitable methods were made by computing the properties of NH3-water mixts. and comparing them with available exptl. data. Other thermophys. properties, i.e., thermal diffusivity, sp. heat, and **liq. d.**, were predicted using std., well established methods over a wide range of temp. and compn. Correlations were developed to express each property as a **function** of **compn.** and **temp.** The **properties** are also presented in a suitable **graphical** form.

L28 ANSWER 50 OF 103 CA COPYRIGHT 2006 ACS on STN
 AN 104:116572 CA
 TI Phase diagrams of the decylammonium chloride/ammonium chloride/water system in the nematic **micellar** region
 AU Rizzatti, Mara Regina; Gault, John D.
 CS Dep. Fis., Univ. Fed. Santa Catarina, Florianopolis, 88000, Brazil
 SO Journal of Colloid and Interface Science (1986), 110(1), 258-62
 AB Phase **diagrams** were obtained as a **function** of **temp.** and surfactant

concn. for the decylammonium chloride (DACl)-water binary system and for ternary systems contg. 1:1627, 1:20, and 1:10 wt. ratios of NH₄Cl:DACl. The binary system presents the usual hexagonal (middle soap), lamellar (neat soap), isotropic, and "coagel" phases as well as a **micellar** nematic of the disk type. The addn. of NH₄Cl greatly inhibits the formation of the hexagonal phase and increases the size of the nematic and lamellar regions while shifting them toward higher temps. As the **concn.** of NH₄Cl to DACl passes 7 wt.% (for 45 wt.% DACl), the nematic is replaced by a lamellar-isotropic two-phase region.

L28 ANSWER 51 OF 103 CA COPYRIGHT 2006 ACS on STN

AN 101:198615 CA

TI Apparent molal volume studies of 2,6-di-tert-butyl-4-methylphenol, 2-tert-butyl-4-methoxyphenol, and 2,6-di-tert-butyl-4-(hydroxymethyl)phenol in aqueous **micelle** solutions of sodium dodecanoate as a **function of micelle concentration and temperature**

AU Alauddin, M.; Verrall, Ronald E.

CS Dep. Chem., Univ. Saskatchewan, Saskatoon, SK, S7N 0W0, Can.

SO Journal of Physical Chemistry (1984), 88(23), 5725-30

AB The partial molal vols. of 2,6-di-tert-butyl-4-methylphenol, 2-tert-butyl-4-methoxyphenol, and 2,6-di-tert-butyl-4-(hydroxymethyl)phenol in aq. **micelle** solns. of Na dodecanoate were detd. by d. measurements as a **function of micelle concn. and temp.** 2,6-Di-tert-butyl-4-methylphenol is solubilized in the interior of the **micelle** while 2-tert-butyl-4-methoxyphenol is solubilized by absorption at the **micelle**-H₂O interface. Estns. of asym. vol. interaction terms v_{xy} and v_{xyy} for 2-tert-butyl-4-methoxyphenol indicate a strong ion-dipole interaction of relatively polar OMe and OH groups with ionic head groups of the surfactant chains. While the time-av. environment of 2,6-di-tert-butyl-4-(hydroxymethyl)phenol is primarily nonaq., there appear to be some H₂O mols. present in the surrounding region. These conclusions are supported by the **temp. dependence** of the limiting slope of the **plots** of $\ln \phi_i$ vs. **concn.** for these systems. The UV molar absorptivity ϵ_{max} , of these solubilizes in aq. **micellar** and hydrocarbon solvents are reported and discussed.

L28 ANSWER 55 OF 103 CA COPYRIGHT 2006 ACS on STN

AN 98:95565 CA

TI The solubility of benzodiazepines in sodium salicylate **solution** and a proposed mechanism for hydrotropic solubilization

AU Badwan, A. A.; El-Khordagui, L. K.; Saleh, A. M.; Khalil, S. A.

CS Fac. Pharm., Univ. Al-Faateh, Libya

SO International Journal of Pharmaceutics (1982), 13(1), 67-74

AB Results of soly. and spectral studies indicate that an electrostatic force of the donor-acceptor type plays an important role in the solubilization of poorly sol. benzodiazepines by hydrotropy. In an attempt to explain the **characteristic** pos. deviation in hydrotropic solubilization **diagrams**, the **soln. properties** of Na salicylate (I) [54-21-7] were studied. **Cond.** expts. indicate mol. aggregation of I at 0.67 M at 25°. The aggregation **concn.** increases as a **function of temp.** Results from d., **viscosity**, and diffusion studies are consistent with those of **cond.** measurements. The marked increase in the solubilizing effect of I is probably assocd. with aggregate formation. Inclusion of the benzodiazepine mols. in the I aggregates may be the mechanism

responsible for the solubilization of these drugs. A donor-acceptor interaction between I and benzodiazepine mols. is assumed to stabilize such an inclusion and det. the degree of soly. of benzodiazepines in I solns.

L28 ANSWER 56 OF 103 CA COPYRIGHT 2006 ACS on STN
AN 98:8370 CA
TI Poloxamer association in aqueous solution
AU Al-Saden, A. A.; Whateley, T. L.; Florence, A. T.
CS Dep. Pharm., Univ. Strathclyde, Glasgow, G1 1XW, UK
SO Journal of Colloid and Interface Science (1982), 90(2), 303-9
AB Aq. solns. of the surface active poly(oxyethylene)-poly(oxopropylene)-poly(oxyethylene) block copolymers (poloxamers) were studied by using photon correlation spectroscopy (quasi-elastic light scattering) and viscosity measurements. Poloxamers 184 and 237 showed detectable aggregates at 25° only at concns. .gtorsim. 6% with size increasing with concn. and with significant polydispersity, probably indicating a multiple assocn. process. At 35°, essentially invariant values for the hydrodynamic radius were found over a wide concn. range and the systems were essentially monodisperse; these systems are more likely to be represented by a closed assocn. model. The more hydrophilic Poloxamer 188, however, retained its **concn. dependence** of aggregate size ≤55°. The variation with temp. of both the hydrodynamic radius of aggregates and the intrinsic viscosity of several poloxamers was rationalized by relating the **temp.-dependency curves** to the cloud point of the poloxamer. In some cases only certain sections of the curve are observable when the cloud point is high, e.g., >100°, or low, e.g., <40°.

L28 ANSWER 62 OF 103 CA COPYRIGHT 2006 ACS on STN
AN 89:24930 CA
TI A study of the thermodynamic properties of the system polystyrene-ethylcyclohexane by the **light scattering** method
AU Kratochvil, Jaroslav; Sedlacek, Blahoslav
CS Inst. Macromol. Chem., Prague, Czech.
SO British Polymer Journal (1977), 9(3), 206-11
AB The thermodyn. properties of the polystyrene [9003-53-6]-ethylcyclohexane [1678-91-7] system were examd. by the **light scattering** method of Th. G. Scholte (1970) between 57-80° for wt. fractions of the polymer 0-0.16 to det. the **temp.**, **concn.**, and mol. wt. **dependence** of the interaction parameter of the polymer-**solvent** system near the θ -temp. Spinodals calcd. from the coeffs. of the interaction **parameter** were in good agreement with exptl. **curves**. The results were compared with a pseudoideal **soln**.

L28 ANSWER 83 OF 103 CA COPYRIGHT 2006 ACS on STN
AN 72:25629 CA
TI Binary systems
AU Cohen-Adad, Roger
CS Fac. Sci. Lyon, Lyons, Fr.
SO Bulletin de l'Union des Physiciens (1969), 63(517), 1201-5
LA French
AB Primarily, phase changes are discussed by means of a **3-dimensional**

diagram with the axes **temp.**, pressure, and **concn.** A plane for const. pressure shows a closed curve, and the crit. point is an extreme of the curve. A plane for const. concn. shows that the crit. point in this case is no longer an extreme of the curve. A **liq.** heated under const. pressure passes through a heterogeneous zone (vapor/liq.) and becomes **liq.** again. A retrograde phenomenon is obsd. Likewise, a gaseous mixt. under isothermal compression passes through the heterogeneous zone and becomes gaseous again. As a 2nd problem, the triple points, which are characterized by 8 variables, are discussed. By means of the equation of state and the chem. potentials, the 3 triple points of the system are calcd. The 3 points representative of the compn. of the phases α, β, γ are situated on a cylinder. The equation of this cylinder is $\phi_{\alpha, \beta, \gamma}(p, T) = 0$ and represents a generalization of the Clapeyron equation for any univariant equil.

L28 ANSWER 96 OF 103 CA COPYRIGHT 2006 ACS on STN

AN 50:10754 CA

OREF 50:2216g-i,2217a

TI Chemical reactor stability and sensitivity

AU Bilous, Oleg; Amundson, Neal R.

CS Univ. of Minnesota, Minneapolis

SO AIChE Journal (1955), 1, 513-21

AB The purpose of this paper is to consider the well-agitated continuous reactor from the standpoint of stability of the steady state. It has been shown in the past that chem.-reaction systems may be unstable in the sense that on slight perturbation they tend to move to a more stable state or that they are stable in their steady states, small perturbations being self-correcting so that the system possesses autoregulation. In this paper methods of developing criteria for the detn. of stability or instability are presented and applied to some simple problems. In order that the effect of large perturbations on the system can be detd., complete **solutions** of the rigorous equations are obtained on the analog **computer** (R.E.A.C.). A complete **plot** of reaction paths in the **concn.-temp.** plane can be obtained in this manner. Because of the nonlinearity of the system one cannot predict with certainty what steady state will be approached after a given large perturbation, multiple steady states being assumed possible. From the phase plot of reaction paths the regions in the plane which lead to certain steady states are delineated. Also it is shown that the natural behavior of a reactor is not to approach an unstable state. So far as the reactor is concerned, the unstable state does not exist. The stability of the system is important to the engineer, as control will be easy or difficult and product quality will be satisfactory or not depending upon the relative stability of the steady state. An unstable state would require more elaborate control than a stable state.

=> log y

STN INTERNATIONAL LOGOFF AT 12:00:22 ON 28 APR 2006

=> d his

(FILE 'HOME' ENTERED AT 09:45:32 ON 27 APR 2006)

FILE 'CA' ENTERED AT 09:45:39 ON 27 APR 2006

L1 5199 S (AUTOMAT? OR COMPUTER OR PROCESSOR OR MICROPROCESS?) (7A) (LIGHT(1A)
 SCATTER? OR TURBID? OR NEPHALOM? OR NEPHELEM? OR NEPELO? OR
 NEPHLOM? OR NEPHOL? OR PH OR VISCOS? OR CONDUCTIV?)
 L2 2283 S L1(8A) (ANALY? OR DETECT? OR DETERMIN? OR ASSAY? OR TEST? OR MEASUR?
 OR MONITOR? OR INSTRUMENT? OR DEVICE OR SENSE OR SENSOR OR SENSING
 OR PROBE OR PROBING OR QUANTIT? OR QUANTIF? OR EVALUAT? OR ASSESS?)
 L3 79 S L2 AND(EMULS? OR MICROEMULS? OR SUSPENS? OR MICELL?)
 L4 187 S L2 AND(TEMPERATUR? OR DEGREE) AND(CONCENTRAT? OR COMPOSIT?)
 L5 90 S L4 AND(LIQUID OR SOLVENT OR SOLUTION OR FLUID)
 L6 317 S L2 AND(CURVE OR PLOT? OR DIAGRAM? OR DISPLAY? OR GRAPH?)
 L7 21 S L6 AND PHASE
 L8 124 S L6 AND(LIQUID OR SOLVENT OR SOLUTION OR FLUID)
 L9 76 S L6 AND(OIL OR POLYMER OR TITRA?)
 L10 7 S L4 AND PHASE
 L11 313 S L3,L5,L7-10
 L12 236 S L11 NOT PY>1997
 L13 41 S L11 AND PATENT/DT AND PY<1999
 L14 240 S L12-13
 L15 232 S L14 NOT(SOLID STATE OR RHODOPS? OR LIVER OR BOARD OR LEACH OR
 STORAGE BATTERY)
 L16 219 S L15 NOT(ELECTRODEP? OR BOILER OR SOIL OR SLAG OR FOAM OR JACKET?)
 L17 3 S L15 NOT L16 AND(PHOSPHATE OR SOIL SOLUTION)
 L18 207 S L16 NOT(BLOOD GAS OR WASTEWATER OR KETONE OR POCKET OR RIPENESS OR
 NONELECTROL? OR SOLAR OR THERMOSTATIC)
 L19 2 S L16 NOT L18 AND EQUILIB?
 L20 187 S L18 NOT(AEROSOL OR AMEBO? OR CHROMATE OR PROGRAMMED DESOR? OR PH
 STAT OR ELECTROLESS OR GASTRIC OR THROMBIN OR AUXIN OR PICKLING)
 L21 1 S L18 NOT L20 AND DRUG STABIL?
 L22 172 S L20 NOT(RECIPE OR CORAL OR HEAT TRANSFER OR MICROWAVE OR BLEACH? OR
 LEACHING OR GRAPHITE OR FINGER OR GAS ANALY? OR INCUBAT?)
 L23 163 S L22 NOT(NUCLEAR OR PWR OR NMR OR TANNING OR COMPENSATING DIODE OR
 COAL OR DIMER)
 L24 169 S L17,L19,L21,L23

=> d bib,ab l24 1-169

L24 ANSWER 8 OF 169 CA COPYRIGHT 2006 ACS on STN
 AN 126:53257 CA
 TI Conductivity of **Concentrated** Aqueous **Solutions** of Several Fluorine-
 Containing Electrolytes in a Wide Range of **Concentrations** and
Temperatures
 AU de Diego, Alberto; Madariaga, Juan M.; Chapela, Eduardo
 CS Kimika Analitikoaren Saila, Euskal Herriko Unibertsitatea, Bilbao, E-
 48080, Spain
 SO Journal of Chemical and Engineering Data (1997), 42(1), 202-208
 AB Specific conductivities (κ) of **concd.** aq. **solns.** of several fluorine
 contg. electrolytes, fluoroboric acid (HBF₄), fluorosilicic acid
 (H₂SiF₆), and fluorotitanic acid (H₂TiF₆), at mass percents (100wAc)
 from 10 to 50 at 15, 25, 35, and 45 °C have been **measured** by making use
 of an **automatic** system based on the "electrodeless **cond.**" technique.
 The results have been analyzed in terms of the well-established Casteel-
 Amis equation and by polynomial equations in the **concn.** As a result,
 empirical models of the type $\kappa = f(100wAc)t$ have been proposed, which

reproduce the results of each chem. system with an overall precision of about $\pm 0.3\%$ and enable the interpolation of cond. at each **temp.** in the whole range of **concn.** studied.

- L24 ANSWER 14 OF 169 CA COPYRIGHT 2006 ACS on STN
AN 124:271734 CA
TI Aqueous Solubilities of Phenol Derivatives by Conductivity Measurements
AU Achard, C.; Jaoui, M.; Schwing, M.; Rogalski, M.
CS Laboratoire de Thermodynamique et d'Analyse Chimique, Universite de Metz, Metz, F-57045, Fr.
SO Journal of Chemical and Engineering Data (1996), 41(3), 504-7
AB The aq. solubilities of 5-chlorophenols and 3-nitrophenols were measured by an elec. cond. method at 15 and 48°. The solubilities of 2-chlorophenol, 4-chlorophenol, 2,4-dichlorophenol, 2,4,6-trichlorophenol, pentachlorophenol, 2-nitrophenol, 4-nitrophenol, and 2,4-dinitrophenol were studied. **Automatic cond. measurements** allow a **detn.** of the solute concn. and hence the soly. **Emulsion** formation can also be followed. The exptl. results are in good agreement with literature values.
- L24 ANSWER 15 OF 169 CA COPYRIGHT 2006 ACS on STN
AN 124:15076 CA
TI An optimized **nephelometer** and nonlinear **processor** for oil-in-water **monitoring**
AU Green, D.A.; Naimimohasses, R.; Barnett, D.M.; Smith, P.R.
CS Department of Electronic and Electrical Engineering, Loughborough University of Technology, Leicestershire, LE11 3TU, UK
SO Proceedings of SPIE-The International Society for Optical Engineering (1995), 2503, 35-43
AB The measurement of low concns. of oil-in-water can be performed by fluorometry but variations in the phys. properties of different oils, in particular their dispersed particle sizes, significantly affect the degree of fluorescence and hence the accuracy of the measurement. Optical scattering can be used to investigate the phys. state of oil-in-water **suspensions**, the strength and direction of the scattering being dependent on the phys. and optical properties of the suspended particles. Optical scattering studies, in conjunction with neural network processors, have recently shown the capability to distinguish between oil **suspensions** over a range of concns. In this paper we extend the approach of combined nephelometry and neural networks and also investigate a technique for minimizing the complexity of design of the nephelometer. Whereas earlier work demonstrated the technique using dissimilar oil types in tap water, we here study the possibly more practical and cogent example of similar oils (two crudes and an engine oil) in sea water.
- L24 ANSWER 17 OF 169 CA COPYRIGHT 2006 ACS on STN
AN 123:86730 CA
TI A sensor for online measurement of the viscosity of non-Newtonian **fluids** using a neural network approach
AU Chang, Victor; Zambrano, Alexander; Mena, Melcris; Millan, Agustin
CS Industrial Measurement and Automation Section, INTEVEP S.A. Research and Technological Support Center, Affiliate of Petroleos de Venezuela, PO Box 76343, Caracas 1070A, Venez.

SO Sensors and Actuators, A: Physical (1995), A47(1-3), 332-6
AB Non-Newtonian **fluids** are characterized by a nonlinear relation between viscosity and shear rate. Typical examples are some **emulsions**. The **graph** of viscosity as a function of the shear rate is known as the rheogram or the rheol. chart. A very simple mech. device with minimal moving parts has been used as a sensor for measuring both the viscosity and the shear rate. A math. model to measure the viscosity in Newtonian **fluids** has been confirmed. However, a math. model of the sensor for the case of non-Newtonian **fluids** is difficult because several variables defining the transducing properties are not independent and the measurement is made during transient dynamic conditions. In solving this problem, a neural network approach has been used. The input consists of two voltages representing the sensor response and the temp. The outputs are the viscosity and the shear rate. The measurement system is made out of a sensor head, an electronic circuit for powering the sensor and signal conditioning, and a neural network software, based in the back propagation learning algorithm. The neural net has been trained using exptl. data from a lab. viscometer and a simplified math. correlation relating the viscosity and input voltages. The sensor has been tested by measurement of the viscosity and the shear rate for **emulsions** of heavy crude oil (bitumen) and water. Good correlation between exptl. data and the system output was obsd. after the neural net training. Online tests of the sensor are being conducted.

αβσL24 ANSWER 20 OF 169 CA COPYRIGHT 2006 ACS on STN

AN 122:197707 CA

TI Automation of **phase diagram** recording

AU Rouse, J.; Adamy, S. T.; Mehrteab, A.; Broze, G.

CS Technol. Cent., Colgate-Palmolive Co., Piscataway, NJ, 08855, USA

SO Journal of the American Oil Chemists' Society (1995), 72(1), 37-42

AB An automated **titrn.** system was developed for generating data to construct **phase diagrams**, which are extremely useful in the development of personal and household products. The authors describe the system and how it can be used to perform dual **titrn.** A clear **microemulsion** sample is **titrated** with an oil until the dispersion turns cloudy (defined to be a transmittance < 90%). This mixt. is then dosed with a certain quantity of cosurfactant, more than enough to clear the mixt. The sample is again **titrated** with oil. This process continues until the sample no longer clears upon adding cosurfactant. The resulting measurements of oil uptake can be used to characterize the boundaries of the L1 or oil-in-H2O **microemulsion** region of the **phase** space. Expts. for up to sixteen samples can be performed, each having individual setup and operating instructions. Features include completely **automated** operation, **computer**-controlled 2-speed mixing, **viscosity detection** at the end-point condition, and the storage of results in a computerized format.

L24 ANSWER 27 OF 169 CA COPYRIGHT 2006 ACS on STN

AN 119:273701 CA

TI Apparatus for the automatic photometric determination of the temperature-dependent and reversible solubility states of cellulose ethers and other organic substances, and its use

PA Hoechst A.-G., Germany

SO Ger. Offen., 11 pp.
 PI DE 4135357 A1 19930429 DE 1991-4135357 19911026
 PRAI DE 1991-4135357 19911026
 AB An app. for **monitoring** and self-regulation of the **automatic** photometric **measurement** of product-specific reversible temp.-**turbidity** curves for cellulose ethers and other substances coagulated by temp. and/or electrolytes is disclosed. A schematic **diagram** of the app. is given.

L24 ANSWER 41 OF 169 CA COPYRIGHT 2006 ACS on STN
 AN 114:187998 CA
 TI Determination of the critical **micelle** concentration. Part 1.
 Computerized extremization of the curvature of the functions $\sigma = f(c)$ or $\gamma = f(c)$
 AU Drugarin, Cornel; Balint, Maria Agneta; Balint, Stephen
 CS Univ. Timisoara, Timisoara, Rom.
 SO Tenside, Surfactants, Detergents (1991), 28(1), 57-61
 AB "Extremization" of the curvature of elec. cond. vs. concn. and surface tension vs. concn. curves is proposed as a new method to det. by computer the crit. **micelle** concn. and **micellization** range of surfactants. Results obtained for the series of surfactants C₈H₁₇-p-C₆H₄-O(CH₂CH₂O)_nCOR are presented.

L24 ANSWER 44 OF 169 CA COPYRIGHT 2006 ACS on STN
 AN 113:47462 CA
 TI Measurement and correlation of **liquid-liquid equilibria** up to critical **solution** temperature
 AU Ochi, Kenji; Tada, Masayuki; Kojima, Kazuo
 CS Dep. Ind. Chem., Nihon Univ., Tokyo, Japan
 SO Fluid Phase Equilibria (1990), 56, 341-59
 AB An app. for measuring the mutual soly. **curve** of binary systems at moderate pressures is presented which is composed of an **equil.** cell made of pressure glass with film heaters and a light sensor. The formation or disappearance of turbidity was confirmed by the intensity of the **scattered light**, which is **monitored** by a **computer** via digital multimeter. The measurement of temps. was made with a platinum resistance thermometer. This technique was examd. for measuring the mutual solubilities in the range of room temp. to the crit. **soln.** temps. on the binary systems: butanol - water, Et Me ketone - water, butyl cellosolve - water and diethylene glycol - benzene. The exptl. results of the mutual solubilities were correlated by the NRTL equation.

L24 ANSWER 49 OF 169 CA COPYRIGHT 2006 ACS on STN
 AN 110:101661 CA
 TI Composition of mixed **micellar** systems of cetrime and chlorhexidine digluconate
 AU Attwood, D.; Patel, H. K.
 CS Dep. Pharm., Univ. Manchester, Manchester, M13 9PL, UK
 SO International Journal of Pharmaceutics (1989), 49(2), 129-34
 AB The variation of the crit. **micelle** concn. (CMC) with the molal ratio of components in mixed **micellar** systems of cetrime and chlorhexidine digluconate was **detd.** by an **automated cond.** technique. The equil. distribution of components between **micelle** and monomer phases was

evaluated by anal. of the CMC data using a theor. treatment based on excess thermodyn. quantities and by an empirical treatment of the cond. data. The addn. of iso-Pr alc. in concns. up to 2 mol•dm⁻³ had little significant effect on the compn. of the mixed **micelles** of these systems.

L24 ANSWER 60 OF 169 CA COPYRIGHT 2006 ACS on STN
AN 103:184661 CA
TI Multiparametric **curve** fitting - VIII. The reliability of dissociation constants estimated by analysis of absorbance-pH **curves**
AU Meloun, Milan; Javurek, Milan
CS Dep. Anal. Chem., Coll. Chem. Technol., Pardubice, CS-532 10, Czech.
SO Talanta (1985), 32(10), 973-86
AB The program SPOPT ests. stability consts. β_{pqr} and molar absorptivities ϵ_{pqr} of all light-absorbing species $MpLqHr$ by anal. of the absorbance-concn. (or absorbance-pH) **curve**. The program DCMINUIT ests. dissocn. consts. and molar absorptivities of protonated species. Both programs were tested and compared with DCLET and LETAGROP-SPEFO for anal. of the overlapping equil. of a triprotic acid. Computer **plots** of the residual-square-sum function are used to test the conditioning of parameters. Two approaches are made to formulation of the math. model, and several optimization algorithms are tested to find a reliable minimization procedure. The accuracy of ill-conditioned parameters is dependent on the precision of the absorbance measurements. General rules for investigation of A-pH **curves** are recommended.

L24 ANSWER 62 OF 169 CA COPYRIGHT 2006 ACS on STN
AN 103:110518 CA
TI Particle size distribution **measurement** by **automated** dual wavelength **turbidimetry**
AU Haseler, Simon C.
CS Res. Div., Kodak Ltd., Harrow/Middlesex, UK
SO Particle Characterization (1985), 2(1), 14-19
AB Numerous methods are reported in the literature for the measurement of (submicron) particle size distribution by turbidimetry. Attempts to apply some of these to coupler dispersions (oil-in-water **emulsions** of importance in the photog. industry) have not in general proved satisfactory, however, because small exptl. errors lead to relatively large errors in the calcd. distribution. In order to reduce this problem a turbidimetric technique involving measurements at two widely sepd. wavelengths, 400 nm and 2.22 μ m, was developed. Its accuracy has been demonstrated using polydisperse polystyrene latexes of known size distribution. With the aid of simple, purpose-built equipment, linked to a desktop computer, the technique is largely automated so that it is suitable for use by an unskilled operator working in a factory environment.

L24 ANSWER 65 OF 169 CA COPYRIGHT 2006 ACS on STN
AN 102:82213 CA
TI Thermodynamic **analysis** and **automatic** drawing of electropotential E-pH **diagrams**
AU Wang, Leshan; Xu, Zhihong; Li, Danian
CS Inst. Chem. Metall., Acad. Sin., Beijing, Peop. Rep. China
SO Kuangye Gongcheng (1984), 4(4), 52-8

LA Chinese
AB A computer-programmed system is established, based on the fundamental principle of aq. **soln.** thermodyn. and the inorg. thermochem. data. The system enables data retrieval, independent chem. reaction balance, thermodyn. calcn., automatic drawing of predominance areas of the **diagrams**, and output of all related data. Hydrometallurgical and corrosion problems can be solved by the system.

L24 ANSWER 112 OF 169 CA COPYRIGHT 2006 ACS on STN
AN 83:184548 CA
TI **Computer-controlled measurement of thermal conductivities of aqueous salt solutions**
AU White, W. R.; Brunson, R. J.; Bearman, R. J.; Lindenbaum, S.
CS Dep. Chem., Univ. Kansas, Lawrence, KS, USA
SO Journal of Solution Chemistry (1975), 4(7), 557-70
AB A **computer**-controlled method to **measure liq.** thermal **conductivities** is described, and data are presented for aq. electrolyte **solns.** The relative thermal conductivities of NaCl and NaI **solns.** agree well with previously published results. The effect of **temp.** on the thermal cond. was investigated. At 23-67°, the relative thermal cond. was invariant with **temp.** within the exptl. error (less than 1%). For a given **concn.** of 1-1 electrolyte, the relative thermal cond. varied linearly with the mol. wt. of the solute.

=> log y

STN INTERNATIONAL LOGOFF AT 11:02:36 ON 27 APR 2006